

一个被子植物“目”的新分类系统简介*

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A brief introduction to a new ordinal classification of the flowering plants

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去年,我们在本刊[36(2):178~192(1998)]介绍了 Takhtajan 的被子植物系统,若这个系统基本上是基于形态学(包括植物化学、染色体、解剖学等资料)的一个代表,那么今天我们乐意介绍一个基于吸取大量分子资料的系统。近 20 年来,分子系统学的飞速发展,足以能提出一个被子植物较全面的系统,与基于形态学的系统相得益彰,互补长短,这正是我们梦寐以求的,可以说是在重建被子植物系统发育史上又迈进了一大步。这个系统由 29 位植物学家组成的“被子植物系统发育小组(The Angiosperm Phylogeny Group)”提出,以“An ordinal classification for the families of flowering plants”为题,发表于 *Annals of the Missouri Botanical Garden* [85(4):531~553, 1998]。我们介绍它的目的有二,其一,可以借此了解这二类系统学(形态学和分子系统学)所构建被子植物系统的异同。这或许对我们今后选题方面有所启发。其次,该文还涉及到一些划定“目”和“科”阶元的原则,对我们深入了解系统发育学派(Phylogenetics)有关这方面的观点,也是十分有益的。

1 对该系统的一些要点的说明

1.1 虽然阶元“科”常常被看作是被子植物系统的中心,但该系统主要着眼于“目”一级,其次才是“科”。理由是目前还不可能去命名被子植物所有的分支(clade)。如果命名被子植物所有的分支,既费力,也难以作为植物多样性知识交流的工具。“目”级对教育有用,也便于研究“科”的系统关系,并可置放一些系统位置尚不明确的“属”。前人所确认的“目”,并非都是单系类群,而现今迫切需要的是以“科”为基本单位的单系集合类群,作为交流知识之用。

1.2 本系统包括 462 个科,40 个被认为单系的“目”和少数一些非正式命名的单系高级类群(见系统名录),这些作为“目”的分支,至少得到一个或几个方面的支持。“目”仍按国际植物命名法规(东京法规, Greuter *et al.*, 1994)*** 来命名,而不是按照现在一些系统发育学派的人所提出的生物命名方法来命名,因为后者尚有许多争论。国际植物命名法规

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*** 文中引用的文献,数量过多,为节省篇幅计,故不列出,请参阅原著。

所采用的“林奈阶层体系”,虽便于记忆,但必须牢记,相同等级的分类群,除非它们是姐妹群,否则在进化上是不可以比较的。

1.3 虽然命名法规上的“优先律”对“科”级以上分类阶元的名称没有约束力,因此未必一定要遵守。但当我们选择“目”的名称时,一般都已经注意了“优先律”,并使用通用的习惯名称,使之平衡。因此,当以后发现有更早的合法名称时,就不宜再作更改了,以保持稳定。

1.4 哪些分支应作为“目”来确认,换言之如何来划分“目”的界限,首先应考虑的是“单系原则”,还要顾及到形态上(通常包括解剖、生化和发育性状等)容易识别的共裔衍征(synapomorphy)。

1.5 该文作者一般采取广义“目”的范围,认为在分类学上限制广义“目”的数目是有益的。若一旦发现在“目”间或“目”内的系统关系得到强有力支持的话,则可采用“超目”或“亚目”等级,以表示它们的进化关系。至于如何确定一个类群应当是“超目”、“目”、“亚目”或“科”,大部分的讨论是空洞无物的,因为这些决定通常是主观的。

1.6 尽量避免采用单“科”的“目”(monofamilial order),以减少分类学上的累赘,但作者也采用了一些单科目,如 *Ceratophyllales**, *Acorales*, *Arecales*, 因为它们的姐妹群多于一个目,若将它们合并于其中的一个姐妹群,则会违背单系原则。

1.7 既要应用“单系原则”,又要采用一些已习惯确认的科,这样有可能会承认许多小科。例如若考虑到 *Dipsacaceae* 和 *Valerianaceae* 已久为人们所确认,但若将它们和广义的 *Caprifoliaceae* 分开而独立成科,那么根据“单系原则”,必须承认 *Diervillaceae*, *Linnaeaceae* 和 *Morinaceae* 也要独立成科。其理由是后三个科的姐妹群多于一个,若要把它们合并于其中的任何一科,势必会违背“单系原则”。这条方针,也同样适用于“目”级阶元。

1.8 有些小科,拟或合并于其单科的姐妹群,也或可以独立,例如: *Cabombaceae*, 可能合并于 *Nymphaeaceae*, *Kingdoniaceae* 可能合并于 *Circaeasteraceae*, *Fumariaceae* 或/和 *Pteridophyllaceae* 合并于 *Papaveraceae*。在系统表中,将这些科名前加一个“+”号,置于方括弧内,并放于其姐妹群下。

1.9 对科的界限,一般不作全面修订,仅根据该科近年来作过研究的作者的意见,尽量多确认一些单系的科。但必须指出,像下列的科,将来宜作进一步研究,如: *Euphorbiaceae*, *Flacourtiaceae*, *Myrtales* 中的一些科, *Caryophyllales* 的核心类群(包括 *Achatocarpaceae*, *Aizoaceae*, *Amaranthaceae*, *Basellaceae*, *Cactaceae*, *Caryophyllaceae*, *Didiereaceae*, *Molluginaceae*, *Nyctaginaceae*, *Phytolaccaceae*, *Portulacaceae*, *Sarcobataceae* 和 *Stegnospemataceae*), 以及一些可能非单系而尚未界定的科,如: *Boraginaceae*, *Scrophulariaceae*, *Santalaceae*, *Brassicaceae*(包括并系的科 *Capparaceae*)。可能和上述相似情况的一些科,如 *Apiaceae* 和 *Araliaceae* 之间的关系,因经研究,前者被认为网结于后者。*Bombacaceae*, *Malvaceae*, *Sterculiaceae* 和 *Tiliaceae* 4 个科的界限也有问题,只有 *Malvaceae* 是单系的,故该文采取广义的 *Malvaceae* 的概念,包括 4 个科。

* 考虑到读者均系专业人员,凡分类群的拉丁名称和非正式名称,一律都不附中译名,以节省篇幅。

1.10 该系统是 Bremer *et al.* (1997, 1996, 1995) 系统的修正, 并基于近年来诸多分子系统学分析的结果(诸如 Anderberg *et al.*, 1998; Backlund & B. Bremer, 1998; Bakker *et al.*, 1998; Kälersjö *et al.*, 1998; Soltis *et al.*, 1998; Thulin *et al.*, 1998; Soltis & Soltis, 1997; Soltis *et al.*, 1997; Gadek *et al.*, 1996; Gustafsson *et al.*, 1996; Morton *et al.*, 1996; Nadot *et al.*, 1995; Nickrent & Soltis, 1995; Soltis *et al.*, 1995; Chase *et al.*, 1995; Bremer *et al.*, 1994; Struwe *et al.*, 1994; Chase *et al.*, 1993 等)。与 Bremer *et al.* 系统主要的不同有: (a) 扩大了 Alismatales (包括了 Araceae) 和 Caryophyllales (包括了 Droseraceae, Nepenthaceae, Polygonaceae, Plumbaginaceae 以及一些从前不包括在传统 Caryophyllales 核心类群的科); (b) 确认较为广义的 Rosales (包括了 Rhamnaceae, Urticaceae, Moraceae 和它们的近缘类群); (c) 加添了一些小的“目”, 如: Ceratophyllales, Acorales, Arecales, Proteales, Garryales, Aquifoliales; (d) 取消了一些目, 如 Aristolochiales, Nymphaeales, Bromeliales, Trochodendrales, Zygophyllales; (e) 单子叶植物和双子叶植物, 不像传统上那样给予其名称和等级, 因为还没有搞清楚应给予它们何种等级为宜; (f) commelinoids (在系统学上, 是单子叶植物的一个进化亚类)、rosoids 和 asterids, 虽然通常分别被认为亚纲等级, subclass Commelinidae, subclass Rosidae 和 subclass Asteridae, 但也存在着上述同样问题。

1.11 图 1 是表示 40 个目之间的关系。系统图中的基支(basal branch)之间的关系和被子植物的根在哪里, 仍然是不清楚的。在 eudicots 分支中, 对花为五数和等基数的一个大亚类群, 所谓 eudicots 核心类群, 愈来愈得到支持, 它主要包括 Caryophyllales, Santalales, Saxifragales, rosids 和 asterids。rosids 和 asterids 被认为是单系类群, 各具二大亚类, 所谓 eurosids I 和 II, 以及 euasterids I 和 II, 也得到不断增长的支持。

1.12 系统名录中, 在 monocots, commelinoids, core eudicots, rosids 等目以上的类群下, 列有一些科名, 表示这些科隶属于这些类群中, 但不属于其下的任何“目”, 因为它们究竟属何“目”, 地位未定。同样, 列在最前面的 11 个科, 如 Amborellaceae, Austrobaileyaceae, Canellaceae 等, 它们属于被子植物, 但既不属于任何前面的 4 个基出目, 也不隶于 monocots 和 eudicots。最后, 还列出一些系统位置未定的科, 它们大多数可能属于 eudicots (包括 core eudicots, rosids 和 asterids), 但至今没有充分的资料支持它们置于 eudicots 中的一个类群。

2 分支图和系统名录

分支图, 见本文第 611 页; 系统名录, 见本文第 612~621 页。

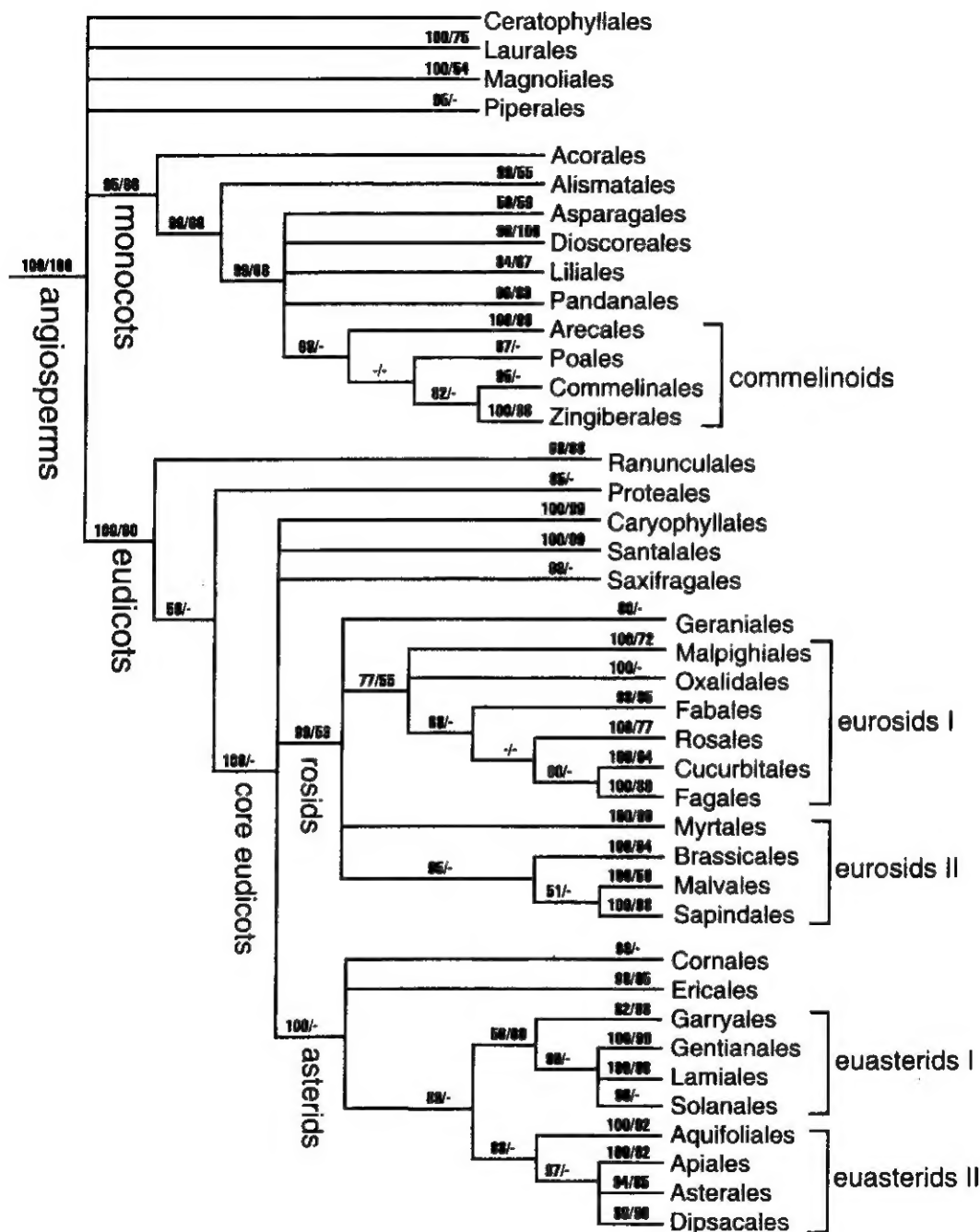


图1 被子植物各目的系统关系,由本文所引用的近年所作分支分析结果编辑而成。在分支上的数目是表示各分支的支持率(由 Jackknife 法检验所得,波折号表示支持率小于 50%)前一数字是由分析 *rbcL*、*atpB* 和 18S rDNA 基因的 545 个序列所得结果,后一数字由分析 *rbcL* 的 2538 个序列所得。

系统名录

- Amborellaceae
 Austrobaileyaceae
 Canellaceae
 Chloranthaceae
 Hydnoraceae
 Illiciaceae
 Nymphaeaceae
 [+ Cabombaceae]
 Rafflesiaceae
 Schisandraceae
 Trimeniaceae
 Winteraceae
 Ceratophyllales Bisch.
 Ceratophyllaceae
 Laurales Perleb
 Atherospermataceae
 Calycanthaceae
 Gomortegaceae
 Hernandiaceae
 Lauraceae
 Monimiaceae
 Siparunaceae
 Magnoliales Bromhead
 Annonaceae
 Degeneriaceae
 Eupomatiaceae
 Himantandraceae
 Magnoliaceae
 Myristicaceae
 Piperales Dumort.
 Aristolochiaceae
 Lactoridaceae
 Piperaceae
 Saururaceae
 MONOCOTS
 Corsiaceae
 Japonoliriaceae
 Nartheciaceae
 Petrosaviaceae
 Triuridaceae
 Acorales Reveal
 Acoraceae
 Alismatales Dumort.
 Alismataceae
 Aponogetonaceae
 Araceae
 Butomaceae
 Cymodoceaceae
 Hydrocharitaceae
 Juncaginaceae
 Limnocharitaceae
 Posidoniaceae
 Potamogetonaceae
 Ruppiaceae
 Scheuchzeriaceae
 Tofieldiaceae
 Zosteraceae
 Asparagales Bromhead
 Agapanthaceae
 Agavaceae
 Alliaceae
 Amaryllidaceae
 Anemarrhenaceae
 Anthericaceae
 Aphyllanthaceae
 Asparagaceae
 Asphodelaceae
 Asteliaceae
 Behniaceae
 Blandfordiaceae
 Boryaceae
 Convallariaceae
 Doryanthaceae
 Hemerocallidaceae
 Herreriaceae
 Hesperocallidaceae
 Hyacinthaceae
 Hypoxidaceae
 Iridaceae
 Ixioliriaceae
 Lanariaceae
 Laxmanniaceae
 Orchidaceae
 Tecophilaeaceae
 Themidaceae
 Xanthorrhoeaceae
 Xeronemataceae
 Dioscoreales Hook. f.
 Burmanniaceae
 Dioscoreaceae
 Taccaceae
 Thismiaceae
 Trichopodaceae
 Liliales Perleb
 Alstroemeriaceae
 Campynemataceae
 Colchicaceae
 Liliaceae
 Luzuriagaceae
 Melanthiaceae
 Philesiaceae
 Ripogonaceae
 Smilacaceae
 Pandanales Lindl.
 Cyclanthaceae
 Pandanaceae
 Stemonaceae
 Velloziaceae
 COMMELINOIDS
 Abolbodaceae
 Bromeliaceae
 Dasypogonaceae
 Hanguanaceae
 Mayacaceae
 Rapateaceae
 Arecales Bromhead
 Areaceae
 Commelinales Dumort.
 Commelinaceae
 Haemodoraceae
 Philodraceae
 Pontederiaceae
 Poales Small
 Anarthriaceae
 Centrolepidaceae
 Cyperaceae
 Ecdeiocoleaceae
 Eriocaulaceae
 Flagellariaceae
 Hydatellaceae
 Joinvilleaceae
 Juncaceae
 Poaceae
 Prioniaceae
 Restionaceae
 Sparganiaceae
 Thurniaceae
 Typhaceae
 Xyridaceae
 Zingiberales Griseb.
 Cannaceae
 Costaceae
 Heliconiaceae
 Lowiaceae
 Marantaceae
 Musaceae
 Strelitziaceae
 Zingiberaceae
 EUDICOTS
 Buxaceae
 Didymelaceae
 Sabiaceae
 Trochodendraceae
 [+ Tetracentraceae]
 Proteales Dumort.
 Nelumbonaceae
 Platanaceae
 Proteaceae
 Ranunculales Dumort.
 Berberidaceae
 Circaeasteraceae
 [+ Kingdoniaceae]
 Eupteleaceae
 Lardizabalaceae
 Menispermaceae
 Papaveraceae
 [+ Fumariaceae]
 [+ Pteridophyllaceae]
 Ranunculaceae
 CORE EUDICOTS
 Aextoxicaceae
 Berberidopsidaceae
 Dilleniaceae
 Gunneraceae
 Myrothamnaceae
 Vitaceae
 Caryophyllales Perleb
 Achatocarpaceae
 Aizoaceae

Amaranthaceae	Ledocarpaceae	Trigoniaceae
Ancistrocladaceae	Melanthaceae	Turneraceae
Asteropeiaceae	Vivianiaceae	Violaceae
Basellaceae	EUROSIDS I	Oxalidales Heintze
Cactaceae	Celastraceae	Cephalotaceae
Caryophyllaceae	Huaceae	Connaraceae
Didiereaceae	Parnassiaceae	Cunoniaceae
Dioncophyllaceae	[+ Lepuropetalaceae]	Elaeocarpaceae
Droseraceae	Stackhousiaceae	Oxalidaceae
Drosophyllaceae	Cucurbitales Dumort.	Tremandraceae
Frankeniaceae	Anisophylleaceae	Rosales Perleb
Molluginaceae	Begoniaceae	Barbeyaceae
Nepenthaceae	Coriariaceae	Cannabaceae
Nyctaginaceae	Corynocarpaceae	Cecropiaceae
Physenaceae	Cucurbitaceae	Celtidaceae
Phytolaccaceae	Datisceae	Dirachmaceae
Plumbaginaceae	Tetramelaceae	Elaeagnaceae
Polygonaceae	Fabales Bromhead	Moraceae
Portulacaceae	Fabaceae	Rhamnaceae
Rhabdodendraceae	Polygalaceae	Rosaceae
Sarcobataceae	Quillajaceae	Ulmaceae
Simmondsiaceae	Surianaceae	Urticaceae
Stegnospermataceae	Fagales Engl.	EUROSIDS II
Tamaricaceae	Betulaceae	Tapisciaceae
Santalales Dumort.	Casuarinaceae	Brassicales Bromhead
Olcaceae	Fagaceae	Akaniaceae
Opiliaceae	Juglandaceae	[+ Bretschneideraceae]
Loranthaceae	Myricaceae	Bataceae
Misodendraceae	Nothofagaceae	Brassicaceae
Santalaceae	Rhoipteleaceae	Caricaceae
Saxifragales Dumort.	Ticodendraceae	Emblingiaceae
Altingiaceae	Malpighiales Mart.	Gyrostermonaceae
Cercidiphyllaceae	Achariaceae	Koeberliniaceae
Crassulaceae	Balanopaceae	Limnanthaceae
Daphniphyllaceae	Caryocaraceae	Moringaceae
Grossulariaceae	Chrysobalanaceae	Pentadiplandraceae
Haloragaceae	Clusiaceae	Resedaceae
Hamamelidaceae	Dichapetalaceae	Salvadoraceae
Iteaceae	Erythroxylaceae	Setchellanthaceae
Paeoniaceae	Euphorbiaceae	Tovariaceae
Penthoraceae	Euphroniaceae	Tropaeolaceae
Pterostemonaceae	Flacourtiaceae	Malvales Dumort.
Saxifragaceae	Goupiaceae	Bixaceae
Tetracarpaeaceae	Hugoniaceae	[+ Diegodendraceae]
ROSIDS	Humiriaceae	Cistaceae
Aphloiaceae	Irvingiaceae	Cochlospermaceae
Crossosomataceae	Ixonanthaceae	Dipterocarpaceae
Ixerbaceae	Lacistemataceae	Malvaceae
Krameriaceae	Linaceae	Muntingiaceae
Picramniaceae	Malesherbiaceae	Neuradaceae
Podostemaceae	Malpighiaceae	Sarcolaenaceae
Stachyuraceae	Medusagynaceae	Sphaerosepalaceae
Staphyleaceae	Ochnaceae	Thymelaeaceae
Tristichaceae	Pandaceae	Myrtales Rchb.
Zygophyllaceae	Passifloraceae	Alzateaceae
Geraniales Dumort.	Putranjivaceae	Combretaceae
Francoaceae	Quiinaeae	Crypteroniaceae
Geraniaceae	Rhizophoraceae	Heteropyxidaceae
[+ Hypseocharitaceae]	Salicaceae	Lythraceae
Greyiaceae	Scyphostegiaceae	Melastomataceae

- Memecylaceae
 Myrtaceae
 Oliniaceae
 Onagraceae
 Penaeaceae
 Psiloxylaceae
 Rhynchocalycaceae
 Vochysiaceae
 Sapindales Dumort.
 Anacardiaceae
 Biebersteiniaceae
 Burseraceae
 Kirkiaceae
 Meliaceae
 Nitrariaceae
 [+ Peganiaceae]
 Rutaceae
 Sapindaceae
 Simaroubaceae
ASTERIDS
 Cornales Dumort.
 Cornaceae
 [+ Nyssaceae]
 Grubbiaceae
 Hydrangeaceae
 Hydrostachyaceae
 Loasaceae
 Ericales Dumort.
 Actinidiaceae
 Balsaminaceae
 Clethraceae
 Cyrillaceae
 Diapensiaceae
 Ebenaceae
 Ericaceae
 Fouquieriaceae
 Halesiaceae
 Lecythidaceae
 Marcgraviaceae
 Myrsinaceae
 Pellicieraceae
 Polemoniaceae
 Primulaceae
 Roridulaceae
 Sapotaceae
 Sarraceniaceae
 Styrcaceae
 Symplocaceae
 Ternstroemiaceae
 Tetrameristaceae
 Theaceae
 Theophrastaceae
EUASTERIDS I
 Boraginaceae
 Plocospermataceae
 Vahliaceae
 Garryales Lindl.
 Aucubaceae
 Eucommiaceae
 Garryaceae
 Oncothecaceae
 Gentianales Lindl.
 Apocynaceae
 Gelsemiaceae
 Gentianaceae
 Loganiaceae
 Rubiaceae
 Lamiales Bromhead
 Acanthaceae
 Avicenniaceae
 Bignoniaceae
 Buddlejaceae
 Byblidaceae
 Cyclocheilaceae
 Gesneriaceae
 Lamiaceae
 Lentibulariaceae
 Myoporaceae
 Oleaceae
 Orobanchaceae
 Paulowniaceae
 Pedaliaceae
 [+ Martyniaceae]
 Phrymaceae
 Plantaginaceae
 Schlegeliaceae
 Scrophulariaceae
 Stilbaceae
 Tetrachondraceae
 Verbenaceae
 Solanales Dumort.
 Convolvulaceae
 Hydroleaceae
 Montiniaceae
 Solanaceae
 Sphenocleaceae
EUASTERIDS II
 Adoxaceae
 Bruniaceae
 Carlemanniaceae
 Columelliaceae
 [+ Desfontainiaceae]
 Eremosynaceae
 Escalloniaceae
 Icacinaceae
 Polyosmaceae
 Sphenostemonaceae
 Tribelaceae
 Apiales Nakai
 Apiaceae
 Araliaceae
 Aralidiaceae
 Griselinaceae
 Melanophyllaceae
 Pittosporaceae
 Torricelliaceae
 Aquifoliales Senft
 Aquifoliaceae
 Helwingiaceae
 Phyllonomaceae
 Asterales Lindl.
 Alseuosmiaceae
 Argophyllaceae
 Asteraceae
 Calyceraceae
 Campanulaceae
 [+ Lobeliaceae]
 Carpodetaceae
 Donatiaceae
 Goodeniaceae
 Menyanthaceae
 Pentaphragmataceae
 Phellinaceae
 Rousseeaceae
 Stylidiaceae
 Dipsacales Dumort.
 Caprifoliaceae
 Diervillaceae
 Dipsacaceae
 Linnaeaceae
 Morinaceae
 Valerianaceae
FAMILIES OF UNCERTAIN POSITION
 Balanophoraceae
 Bonnetiaceae
 Cardiopteridaceae
 Ctenolophonaceae
 Cynomoriaceae
 Cytinaceae
 Dipentodontaceae
 Elatinaceae
 Geissolomataceae
 Hoplostigmataceae
 Kaliphoraceae
 Lepidobotryaceae
 Lissocarpaceae
 Lophyopyxidaceae
 Medusandraceae
 Metteniusaceae
 Mitrastemonaceae
 Paracryphiaceae
 Pentaphyllaceae
 Peridiscaceae
 Plagiopteraceae
 Pottingeriaceae
 Sladeniaceae
 Strasburgeriaceae
 Tepuianthaceae
 “目”的异名名录
 Acanthales Lindl.
 = Lamiales
 Acerales Lindl.
 = Sapindales
 Actinidiales Takht. ex Reveal
 = Ericales
 Adoxales Nakai
 -not accepted, family under
 euasterids II
 Aesculales Bromhead

- = Sapindales
 Agavales Hutch.
 = Asparagales
 Alliales Traub
 = Asparagales
 Alstroemeriales Hutch.
 = Liliales
 Altingiales Doweld
 = Saxifragales
 Amaranthales Dumort.
 = Caryophyllales
 Amaryllidales Bromhead
 = Asparagales
 Ambrosiales Dumort.
 = Asterales
 Ammiales Small
 = Apiales
 Amomales Lindl.
 = Zingiberales
 Ancistrocladales Takht.
 = Caryophyllales
 Annonales Lindl.
 = Magnoliales
 Anthobolales Dumort.
 = Santalales
 Apocynales Bromhead
 = Gentianales
 Aponogetonales Hutch.
 = Alismatales
 Arales Dumort.
 = Alismatales
 Araliales Reveal
 = Apiales
 Aralidiales Takht. ex Reveal
 = Apiales
 Aristolochiales Dumort.
 = Piperales
 Asarales Horan.
 = Piperales
 Asclepiadales Dumort.
 = Gentianales
 Asteliales Dumort.
 = Asparagales
 Atriplicales Horan.
 = Caryophyllales
 Aucabales Takht.
 = Garryales
 Austrobaileales Takht. ex
 Reveal
 -not accepted, family at be-
 ginning of system
 Avenales Bromhead
 = Poales
 Balanopales Engl.
 = Malpighiales
 Balanophorales Dumort
 -not accepted, family un-
 placed
 Balsaminales Lindl.
 = Ericales
 Barbeyales Takht. & Reveal
 = Rosales
 Batales Engl.
 = Brassicales
 Begoniales Dumort.
 = Cucurbitales
 Berberidales Dumort.
 = Ranunculales
 Betulales Bromhead
 = Fagales
 Biebersteiniales Takht.
 = Sapindales
 Bignoniales Lindl.
 = Lamiales
 Bixiales Lindl.
 = Malvales
 Boraginales Dumort.
 -not accepted, family un-
 der euasterids I
 Brexiales Lindl.
 -not accepted, family un-
 der eurosids I
 Bromeliales Dumort.
 -not accepted, family un-
 der commelinoids
 Bruniales Dumort.
 -not accepted, family un-
 der euasterids II
 Brunoniales Lindl.
 = Asterales
 Burmanniales Heintze
 = Dioscoreales
 Burserales Baskerville
 = Sapindales
 Butomales Hutch.
 = Alismatales
 Buxales Takht. ex Reveal
 -not accepted, family un-
 der eudicots
 Byblidiales Nakai ex Reveal
 = Lamiales
 Cactales Dumort.
 = Caryophyllales
 Callitrichales Dumort.
 = Lamiales
 Calycanthales Mart.
 = Laurales
 Calycerales Takht. ex Reveal
 = Asterales
 Campanulales Rchb.
 = Asterales
 Canellales Cronquist
 -not accepted, family at
 beginning of system
 Cannales Dumort.
 = Zingiberales
 Capparales Hutch.
 = Brassicales
 Caprifoliales Lindl.
 = Dipsacales
 Cardiopteridales Takht.
 -not accepted, family un-
 der euasterids II
 Carduales Small
 = Asterales
 Caricales L. D. Benson
 = Brassicales
 Cassiales Horan.
 = Fabales
 Casuarinales Lindl.
 = Fagales
 Celastrales Baskerville
 -not accepted, family un-
 der eurosids I
 Centrolepidales Takht.
 = Poales
 Cephalotales Nakai
 = Oxalidales
 Cercidiphyllales Hu ex Reveal
 = Saxifragales
 Chenopodiales Dumort.
 = Caryophyllales
 Chironiales Griseb.
 = Gentianales
 Chloranthales A. C. Sm. ex
 J.-F. Leroy
 -not accepted, family at
 beginning of system
 Cinchonales Lindl.
 = Gentianales
 Circaeasterales Takht.
 = Ranunculales
 Cistales Rchb.
 = Malvales
 Citrales Dumort.
 = Sapindales
 Coccolales Nakai
 = Arecales
 Colchicales Dumort.
 = Liliales
 Combretales Baskerville
 = Myrtales
 Connarales Takht. ex Reveal
 = Cunoniales
 Convolvulales Dumort.
 = Solanales
 Coriariales Lindl.
 = Cucurbitales
 Corylales Dumort.
 = Fagales
 Corynocarpales Takht.
 = Cucurbitales
 Crassulales Lindl.
 = Saxifragales
 Crossosomatales Takht. ex
 Reveal
 -not accepted, family un-
 der rosids
 Cunoniales Hutch.
 = Oxalidales

- Cyclanthales J. H. Schaffn.
 = Pandanales
 Cymodoceales Nakai
 = Alismatales
 Cynomoriales Burnett
 -not accepted, family unplaced
 Cyperales Hutch.
 = Poales
 Cytinales Dumort.
 -not accepted, family unplaced
 Daphnales Lindl.
 = Malvales
 Daphniphyllales Pulle ex Cronquist
 = Saxifragales
 Datiscales Dumort.
 = Cucurbitales
 Desfontainiales Takht.
 -not accepted, family under euasterids II
 Diapensiales Engl. & Gilg
 = Ericales
 Didymelales Takht.
 -not accepted, family under eudicots
 Dilleniales Hutch.
 -not accepted, family under core eudicots
 Dioncophyllales Takht. ex Reveal
 = Caryophyllales
 Diospyrales Prantl
 = Ericales
 Droserales Griseb.
 = Caryophyllales
 Ebenales Engl.
 = Ericales
 Elaeagnales Bromhead
 = Rosales
 Elaeocarpaceales Takht.
 = Oxalidales
 Elatiniales Nakai
 -not accepted, family unplaced
 Elodeales Nakai
 = Alismatales
 Empetrals Raf.
 = Ericales
 Eriocaulales Nakai
 = Poales
 Eucommiales Nemejc ex Cronquist
 = Garryales
 Euphorbiales Lindl.
 = Malpighiales
 Eupomatiales Takht. ex Reveal
 = Magnoliales
 Eupteleales Hu ex Reveal
 = Ranunculales
 Euryales H. L. Li
 -not accepted, family at beginning of system
 Ficales Dumort.
 = Rosales
 Flacourtiiales Heintze
 = Malpighiales
 Fouquieriales Takht. ex Reveal
 = Ericales
 Francoales Takht.
 = Geraniales
 Frangulales Wirtg.
 = Rosales
 Galiales Bromhead
 = Gentianales
 Geissolomatales Takht. ex Reveal
 -not accepted, family unplaced
 Gesneriales Dumort.
 = Lamiales
 Glaucidiales Takht. ex Reveal
 = Ranunculales
 Globulariales Dumort.
 = Lamiales
 Goodeniales Lindl.
 = Asterales
 Greyiales Takht.
 = Geraniales
 Grossulariales Lindl.
 = Saxifragales
 Gunnerales Takht. ex Reveal
 -not accepted, family under core eudicots
 Gyrocarpaceales Dumort.
 = Laurales
 Gyrostemonales Takht.
 = Brassicales
 Haemodorales Hutch.
 = Commelinales
 Haloragales Bromhead
 = Saxifragales
 Hamamelidales Griseb.
 = Saxifragales
 Hanguanals R. Dahlgren ex Reveal
 -not accepted, family under commelinoids
 Helleborales Nakai
 = Ranunculales
 Helwingiales Takht.
 = Aquifoliales
 Himantandrales Doweld & Shevryyova
 = Magnoliales
 Hippuridales Pulle ex Reveal
 = Lamiales
 Homaliales Bromhead
 = Malpighiales
 Hortensiales Griseb.
 = Cornales
 Hydatellales Cronquist
 = Poales
 Hydnoales Takht. ex Reveal
 -not accepted, family at beginning of system
 Hydrangeales Nakai
 = Cornales
 Hydrastidales Takht.
 = Ranunculales
 Hydropheltidales (Bartl.) Spenn.
 -not accepted, family Nymphaeaceae at beginning of system
 Hydrostachyales Diels ex Reveal
 = Cornales
 Hypericales Dumort.
 = Malpighiales
 Hypoxidales Takht.
 = Asparagales
 Icacinales Tiegh. ex Reveal
 -not accepted, family under euasterids II
 Illiciales Hu ex Cronquist
 -not accepted, family at beginning of system
 Iridales Raf.
 = Asparagales
 Ixiales Lindl.
 = Asparagales
 Jasminales Dumort.
 = Lamiales
 Juglandales Dumort.
 = Fagales
 Julianiales Engl.
 = Sapindales
 Juncaginales Hutch.
 = Alismatales
 Juncals Dumort.
 = Poales
 Lacistematals Baskerville
 = Malpighiales
 Lactoridales Takht. ex Reveal
 = Piperales
 Lardizabalales Loconte
 = Ranunculales
 Lecythidales Cronquist
 = Ericales
 Leineriales Engl.
 = Sapindales
 Lentibulariales Lindl.
 = Lamiales
 Ligustrales Bartl. ex Bisch.
 = Lamiales

- Limnanthales Nakai
 = Brassicales
 Linales Baskerville
 = Malpighiales
 Loasales Bessey
 = Cornales
 Loganiales Lindl.
 = Gentianales
 Lonicerales T. Liebe
 = Dipsacales
 Loranthes Dumort.
 = Santalales
 Lythrales Caruel
 = Myrtales
 Maranthales Dumort.
 -not accepted, family Po-
 dostemaceae under rosids
 Mayacales Nakai
 -not accepted, family un-
 der commelinoids
 Medusagynales Takht.
 = Malpighiales
 Medusandrales Brenan
 -not accepted, family un-
 placed
 Melanthiales R. Dahlgren ex
 Reveal
 = Liliales
 Melastomatales Oliv.
 = Myrtales
 Meliales Lindl.
 = Sapindales
 Menispermiales Bromhead
 = Ranunculales
 Menyanthes T. Yamaz. ex
 Takht.
 = Asterales
 Metteniusales Takht.
 -not accepted, family un-
 placed
 Mitrastemonales Makino
 -not accepted, family un-
 placed
 Monimiales Dumort.
 = Laurales
 Moringales Nakai
 = Brassicales
 Myricales Engl.
 = Fagales
 Myristicales Thomé
 = Magnoliales
 Myrothamniales Nakai ex Re-
 veal
 -not accepted, family un-
 der core eudicots
 Myrsinales Spenn.
 = Ericales
 Najadales Dumort.
 = Alismatales
 Narcissales Dumort.
 = Asparagales
 Nartheciales Reveal & Zom-
 lefer
 -not accepted, family un-
 der monocots
 Nelumbonales Reveal
 = Proteales
 Nepenthes Dumort.
 = Caryophyllales
 Nolanales Lindl.
 = Solanales
 Nyctaginales Dumort.
 = Caryophyllales
 Nymphaeales Dumort.
 -not accepted, family at
 beginning of system
 Ochneales Hutch. ex Reveal
 = Malpighiales
 Oenotherales Bromhead
 = Myrtales
 Olacales Benth.
 = Santalales
 Oleales Lindl.
 = Lamiales
 Onagrales Rchb.
 = Myrtales
 Opuntiales Willk.
 = Caryophyllales
 Orchidales Raf.
 = Asparagales
 Paeoniales Heintze
 = Saxifragales
 Pandales Engl. & Gilg
 = Malpighiales
 Papaverales Dumort.
 = Ranunculales
 Paracryphiales Takht.
 -not accepted, family un-
 placed
 Paridales Dumort.
 = Liliales
 Parnassiales Nakai
 -not accepted, family un-
 der eurosids I
 Passiflorales Dumort.
 = Malpighiales
 Penaeales Lindl.
 = Myrtales
 Petiveriales Lindl.
 = Caryophyllales
 Petrosaviales Takht.
 -not accepted, family under
 monocots
 Phylodrales Dumort.
 = Commelinales
 Physenales Takht.
 = Caryophyllales
 Pinguiculales Dumort.
 = Lamiales
 Pittosporales Lindl.
 = Apiales
 Plantaginales Lindl.
 = Lamiales
 Platanales J. H. Schaffn.
 = Proteales
 Plumbaginales Lindl.
 = Caryophyllales
 Podophyllales Dumort.
 = Ranunculales
 Podostemales Lindl.
 -not accepted, family un-
 der rosids
 Polemoniales Bromhead
 = Ericales
 Polygalales Dumort.
 = Fabales
 Polygonales Dumort.
 = Caryophyllales
 Pontederiales Hook. f.
 = Commelinales
 Portulacales Dumort.
 = Caryophyllales
 Posidoniales Nakai
 = Alismatales
 Potamogetonales Dumort.
 = Alismatales
 Primulales Dumort.
 = Ericales
 Quercuales Burnett
 = Fagales
 Rafflesiales Oliv.
 -not accepted, family at
 beginning of system
 Resedales Dumort.
 = Brassicales
 Restionales J. H. Schaffn.
 = Poales
 Rhamnales Dumort.
 = Rosales
 Rhinanthales Dumort.
 = Lamiales
 Rhizophorales Tiegh. ex Re-
 veal
 = Malpighiales
 Rhodorales Horan.
 = Ericales
 Rhoipteleales Novák ex
 Reveal
 = Fagales
 Roridulales Nakai
 = Ericales
 Rubiales Dumort.
 = Gentianales
 Ruppiales Nakai
 = Alismatales
 Rutaes Perleb
 = Sapindales
 Sabiales Takht.
 -not accepted, family un-
 der eudicots

Salicales Lindl.
= Malpighiales
Salvadorales R. Dahlgren ex
Reveal
= Brassicales
Samolales Dumort.
= Ericales
Samydales Dumort.
= Malpighiales
Sanguisorbales Dumort.
= Rosales
Sapotales Hook. f.
= Ericales
Sarraceniales Bromhead
= Ericales
Scheuchzeriales B. Boivin
= Alismatales
Scleranthales Dumort.
= Caryophyllales
Scrophulariales Lindl.
= Lamiales
Scyphostegiales Croizat
= Malpighiales
Sedales Rchb.
= Saxifragales
Silenales Lindl.
= Caryophyllales
Simmondsiales Reveal
= Caryophyllales
Smilacales Lindl.
= Liliales
Stellariales Dumort.
= Caryophyllales
Stylidiales Takht. ex Reveal
= Asterales
Styracales Bisch.
= Ericales
Taccales Dumort.
= Dioscoreales
Tarnales Dumort.
= Dioscoreales
Tamaricales Hutch.
= Caryophyllales
Tecophilaeales Traub ex Re-
veal
= Asparagales
Theales Lindl.
= Ericales
Theligonales Nakai
= Gentianales
Thymelaeales Willk.
= Malvales
Tiliales Caruel
= Malvales
Tofieldiales Reveal & Zomle-
fer
= Alismatales
Torricelliales Takht. ex
Reveal
= Apiales

Tovariales Nakai
= Brassicales
Trilliales Takht.
= Liliales
Triuridales Hook. f.
-not accepted, family un-
der monocots
Trochodendrales Takht. ex
Cronquist
-not accepted, family un-
der eudicots
Tropaeolales Takht. ex
Reveal
= Brassicales
Turnerales Dumort.
= Malpighiales
Typhales Dumort.
= Poales
Ulmals Lindl.
= Rosales
Urticales Dumort.
= Rosales
Vacciniales Dumort.
= Ericales
Vallisneriales Nakai
= Alismatales
Velloziales R. Dahlgren ex
Reveal
= Pandanales
Veratralles Dumort.
= Liliales
Verbenales Horan.
= Lamiales
Viburnales Dumort.
-not accepted, family un-
der euasterids II
Vincals Horan.
= Gentianales
Violales Perleb
= Malpighiales
Vitales Reveal
-not accepted, family un-
der core eudicots
Vochysiales Dumort.
= Myrtales
Winterales A. C. Sm. ex Re-
veal
-not accepted, family at
beginning of system
Xyridales Lindl.
= Poales
Zosteriales Nakai
= Alismatales
Zygophyllales Takht.
-not accepted, family un-
der rosids
习见“科”的异名名录
Abrophyllaceae
= Carpodetaceae
Acanthochlamydeaceae

= Velloziaceae
Aceraceae
= Sapindaceae
Achradales
= Sapotaceae
Aegiceratales
= Myrsinaceae
Agdestidaceae
= Phytolaccaceae
Aitoniaceae
= Meliaceae
Alangiaceae
= Cornaceae
Aloaceae
= Asphodelaceae
Alsinaceae
= Caryophyllaceae
Ambrosiaceae
= Asteraceae
Amygdalaceae
= Rosaceae
Androstachyaceae
= Euphorbiaceae
Antoniaceae
= Loganiaceae
Apodanthaceae
= Rafflesiaceae
Apostasiaceae
= Orchidaceae
Aptandraceae
= Olacaceae
Aristoteliaceae
= Elaeocarpaceae
Asclepiadaceae
= Apocynaceae
Asteranthaceae
= Lecythidaceae
Averrhoaceae
= Oxalidaceae
Avetraceae
= Dioscoreaceae
Balanitaceae
= Zygophyllaceae
Barbeuiaceae
= Phytolaccaceae
Barclayaceae
= Nymphaeaceae
Barringtoniaceae
= Lecythidaceae
Baueraceae
= Cunoniaceae
Baxteriaceae
= Desypogonaceae
Bembiciaceae
= Flacourtiaceae
Berzeliaceae
= Bruniaceae
Bischofiaceae
= Euphorbiaceae
Blepharocaryaceae

= Anacardiaceae	= Asteraceae	= Phyllonomaceae
Boerlagellaceae	Conostylidaceae	Dysphaniaceae
= Sapotaceae	= Haemodoraceae	= Amaranthaceae
Bombacaceae	Cordiaceae	Ehretiaceae
= Malvaceae	= Boraginaceae	= Boraginaceae
Boopidaceae	Coridaceae	Ellisiophyllaceae
= Calyceraceae	= Primulaceae	= Scrophulariaceae
Bretschneideraceae	Corokiaceae	Empetraceae
= Akaniaceae	= Argophyllaceae	= Ericaceae
Brexiceae	Corylaceae	Epacridaceae
= Celastraceae	= Betulaceae	= Ericaceae
Brunelliaceae	Croomiaceae	Eremolepidaceae
= Cunoniaceae	= Stemonaceae	= Santalaceae
Brunoniaceae	Cruciferae	Eriospermaceae
= Goodeniaceae	= Brassicaceae	= Convallariaceae
Bumeliaceae	Curtisiaceae	Erycibaceae
= Sapotaceae	= Cornaceae	= Convolvulaceae
Burchardiaceae	Cuscutaceae	Erythralaceae
= Colchicaceae	= Convolvulaceae	= Olacaceae
Byttneriaceae	Cyananthaceae	Eucryphiaceae
= Malvaceae	= Campanulaceae	= Cunoniaceae
Cabombaceae	Cyanastraceae	Euryalaceae
= Nymphaeaceae	= Tecophilaeaceae	= Nymphaeaceae
Caesalpiniaceae	Cynocrambaceae nom. illeg.	Exocarpaceae
= Fabaceae	= Rubiaceae	= Santalaceae
Calectasiaceae	Cyphiaceae	Flindersiaceae
= Desypogonaceae	= Campanulaceae	= Rutaceae
Callitrichaceae	Cyphocarpaceae	Foetidiaceae
= Plantaginaceae	= Campanulaceae	= Lecythidaceae
Calochortaceae	Cypripediaceae	Frangulaceae
= Liliaceae	= Orchidaceae	= Rhamnaceae
Camelliaceae	Dactylanthaceae	Fumariaceae
= Theaceae	= Balanophoraceae	= Papaveraceae
Canotiaceae	Davidiaceae	Funkiaceae
= Celastraceae	= Cornaceae	= Agavaceae
Cansjeraceae	Davidsoniaceae	Galacaceae
= Opiliaceae	= Cunoniaceae	= Diapensiaceae
Capparaceae	Decaisneaceae	Geitonoplesiaceae
= Brassicaceae	= Lardizabalaceae	= Hemerocallidaceae
Carduaceae	Desfontainiaceae	Geniostomaceae
= Asteraceae	= Columelliaceae	= Loganiaceae
Cassythaceae	Dialypetalanthaceae	Geosiridaceae
= Lauraceae	= Rubiaceae	= Iridaceae
Chaletiaceae	Dianellaceae	Gisekiaceae
= Dichapetalaceae	= Hemerocallidaceae	= Phytolaccaceae
Chenopodiaceae	Dichondraceae	Glaucidiaceae
= Amaranthaceae	= Convolvulaceae	= Ranunculaceae
Chionographidaceae	Diclidanthaceae	Globulariaceae
= Melanthiaceae	= Polygalaceae	= Plantaginaceae
Chloanthaceae	Diegodendraceae	Goetzeaceae
= Lamiaceae	= Bixaceae	= Solanaceae
Cichoriaceae	Dionaeaceae	Gonystylaceae
= Asteraceae	= Droseraceae	= Thymelaeaceae
Cleomaceae	Dracaenaceae	Gouaniaceae
= Brassicaceae	= Convallariaceae	= Rhamnaceae
Cneoraceae	Duabangaceae	Gramineae
= Rutaceae	= Lythraceae	= Poaceae
Cobaeaceae	Duckeodendraceae	Gronoviaceae
= Polemoniaceae	= Solanaceae	= Loasaceae
Compositae	Dulongiaceae nom. illeg.	Gustaviaceae

= Lecythidaceae
 Guttiferae
 = Clusiaceae
 Gyocarpaceae
 = Hernandiaceae
 Halophilaceae
 = Hydrocharitaceae
 Halophytaceae
 = Amaranthaceae
 Hectorellaceae
 = Portulacaceae
 Heliotropiaceae
 = Boraginaceae
 Heloniadaceae
 = Melanthiaceae
 Helosidaceae
 = Balanophoraceae
 Henriqueziaceae
 = Rubiaceae
 Hippocastanaceae
 = Sapindaceae
 Hippocrateaceae
 = Celastraceae
 Hippuridaceae
 = Plantaginaceae
 Hortoniaceae
 = Monimiaceae
 Hostaceae
 = Agavaceae
 Humbertiaceae
 = Convolvulaceae
 Hydrastidaceae
 = Ranunculaceae
 Hydrocotylaceae
 = Araliaceae
 Hydrophylloideae
 = Nymphaeaceae
 Hydrophyllaceae
 = Boraginaceae
 Hymenocardiaceae
 = Euphorbiaceae
 Hypecoaceae
 = Papaveraceae
 Hypericaceae
 = Clusiaceae
 Hypseocharitaceae
 = Geraniaceae
 Idiospermaceae
 = Calycanthaceae
 Illecebraceae
 = Caryophyllaceae
 Jasionaceae
 = Campanulaceae
 Jasminiaceae
 = Oleaceae
 Johnsoniaceae
 = Hemerocallidaceae
 Julianiaceae
 = Anacardiaceae
 Kiggelariaceae

= Flacourtiaceae
 Kingdoniaceae
 = Circasteraceae
 Kirengeshomaceae
 = Hydrangeaceae
 Labiatae
 = Lamiaceae
 Langsdorffiaceae
 = Balanophoraceae
 Leeaceae
 = Vitaceae
 Leguminosae
 = Fabaceae
 Leitneriaceae
 = Simaroubaceae
 Lemnaceae
 = Araceae
 Lennoaceae
 = Boraginaceae
 Leoniaceae
 = Violaceae
 Lepuropetalaceae
 = Parnassiaceae
 Lilaaceae
 = Juncaginaceae
 Limoniaceae
 = Plumbaginaceae
 Liriodendraceae
 = Magnoliaceae
 Lobeliaceae
 = Campanulaceae
 Lomandraceae
 = Laxmanniaceae
 Lophiraceae
 = Ochnaceae
 Lophophytaceae
 = Balanophoraceae
 Luxemburgiaceae
 = Ochnaceae
 Malaceae
 = Rosaceae
 Martyniaceae
 = Pedaliaceae
 Mastixiaceae
 = Cornaceae
 Medeolaceae
 = Liliaceae
 Meliosmaceae
 = Sabiaceae
 Mendonciaceae
 = Acanthaceae
 Mesembryanthemaceae
 = Aizoaceae
 Mimosaceae
 = Fabaceae
 Monotaceae
 = Dipterocarpaceae
 Monotropaceae
 = Ericaceae
 Mouririaceae

= Memecylaceae
 Moutabeaceae
 = Polygalaceae
 Myriophyllaceae
 = Haloragaceae
 Mystropetalaceae
 = Balanophoraceae
 Najadaceae
 = Hydrocharitaceae
 Nandinaceae
 = Berberidaceae
 Napoleonaceae
 = Lecythidaceae
 Naucleaceae
 = Rubiaceae
 Nectaropetalaceae
 = Erythroxylaceae
 Nelsoniaceae
 = Acanthaceae
 Nemacladaceae
 = Campanulaceae
 Nesogenaceae
 = Cyclocheilaceae
 Nolanaceae
 = Solanaceae
 Nolinaceae
 = Convallariaceae
 Nupharaceae
 = Nymphaeaceae
 Nyctanthaceae
 = Oleaceae
 Nyssaceae
 = Cornaceae
 Octoknemaceae
 = Olacaceae
 Oftiaceae
 = Scrophulariaceae
 Ophiopogonaceae
 = Convallariaceae
 Ostrydaceae
 = Santalaceae
 Pachysandraceae
 = Buxaceae
 Palmae
 = Arecaceae
 Papilionaceae
 = Fabaceae
 Peganaceae
 = Nitrariaceae
 Pentastemonaceae
 = Stemonaceae
 Peperomiaceae
 = Piperaceae
 Periplocaceae
 = Apocynaceae
 Peripterygiaceae
 = Cardiotpteridaceae
 Petermanniaceae
 = Colchicaceae
 Petiveriaceae

= Phytolaccaceae	Salpiglossidaceae	= Lamiaceae
Philadelphaceae	= Solanaceae	Syringaceae
= Hydrangeaceae	Sambucaceae	= Oleaceae
Phormiaceae	= Adoxaceae	Tetracentraceae
= Hernerocallidaceae	Samolaceae	= Trochodendraceae
Phylicaceae	= Primulaceae	Tetradiclidaceae
= Rhamnaceae	Saniculaceae	= Peganaceae
Picrodendraceae	= Apiaceae	Tetragoniaceae
= Euphorbiaceae	Sarcophytaceae	= Aizoaceae
Pinguiculaceae	= Balanophoraceae	Tetrastylidiaceae
= Lentibulariaceae	Sarcospermataceae	= Olacaceae
Pistaciaceae	= Sapotaceae	Thalassiaceae
= Anacardiaceae	Sargentodoxaceae	= Hydrocharitaceae
Pistiaceae	= Lardizabalaceae	Theligonaceae
= Araceae	Saurauaceae	= Rubiaceae
Platystemonaceae	= Actinidiaceae	Thunbergiaceae
= Papaveraceae	Sauvagesiaceae	= Acanthaceae
Plumeriaceae	= Ochnaceae	Tiliaceae
= Apocynaceae	Scaevolaceae	= Malvaceae
Podaceae	= Goodeniaceae	Trapaceae
= Anacardiaceae	Scpaceae	= Lythraceae
Podophyllaceae	= Euphorbiaceae	Trapellaceae
= Berberidaceae	Schoepfiaceae	= Pedaliaceae
Polygonanthaceae	= Olacaceae	Tribulaceae
= Anisophylleaceae	Sclerophylacaceae	= Zygophyllaceae
Potaliaceae	= Solanaceae	Tricyrtidaceae
= Gentianaceae	Scoliopaceae	= Liliaceae
Ptaeroxylaceae	= Liliaceae	Trilliaceae
= Rutaceae	Scybalaceae	= Melanthiaceae
Pteridophyllaceae	= Balanophoraceae	Triplostegiaceae
= Papaveraceae	Scytometalaceae	= Valerianaceae
Punicaceae	= Lecythidaceae	Uapacaceae
= Lythraceae	Selaginaceae	= Euphorbiaceae
Pyrolaceae	= Scrophulariaceae	Ullucaceae
= Ericaceae	Sesamaceae	= Basellaceae
Ranzaniaceae	= Pedaliaceae	Umbelliferae
= Berberidaceae	Sesuvaceae	= Apiaceae
Reaumuriaceae	= Aizoaceae	Utriculariaceae
= Tamaricaceae	Simethidaceae	= Lentibulariaceae
Retziaceae	= Hernerocallidaceae	Uvulariaceae
= Stilbaceae	Siphonodontaceae	= Colchicaceae
Rhinanthaceae	= Celastraceae	Vacciniaceae
= Orobanchaceae	Sonneratiaceae	= Ericaceae
Rhodoleiaceae	= Lythraceae	Viburnaceae
= Hamamelidaceae	Spigeliaceae	= Adoxaceae
Rhopalocarpaceae	= Loganiaceae	Viscaceae
= Sphaerosepalaceae	Stenomericaceae	= Santalaceae
Rhynchothecaceae	= Dioscoreaceae	Viticaceae
= Ledocarpaceae	Sterculiaceae	= Lamiaceae
Roxburghiaceae	= Malvaceae	Walleriaceae
= Stemonaceae	Stilaginaceae	= Tecophilaeaceae
Ruscaceae	= Euphorbiaceae	Wellstediaceae
= Convallariaceae	Strychnaceae	= Boraginaceae
Saccifoliaceae	= Loganiaceae	Xanthophyllaceae
= Gentianaceae	Stylobasiaceae	= Polygalaceae
Salaciaceae	= Surianaceae	Xerophyllaceae
= Celastraceae	Stylocerataceae	= Melanthiaceae
Salicorniaceae	= Buxaceae	Zannichelliaceae
= Amaranthaceae	Symphoremataceae	= Potamogetonaceae